USKH
SHARED VISION. UNIFIED APPROACH.

January 30, 2009

Gary Gaffney, P.E.
Idaho Department of Environmental Quality
2110 Ironwood Parkway
Coeur d'Alene, ID 83814

Subject: City of Plummer Wastewater Treatment Plant 95% Comments Response, Final Construction Document Submittal for Approval

Dear Mr. Gaffney:

Thanks for your speedy review of our 95% plans and specs, and the comprehensive set of comments on earlier documents. As usual, I've replied to your comments below by reprinting your comments in normal font, with our responses in *italics*. Accompanying this letter are the final documents that address your comments, our internal reviews, and other review comments we've received from Terry Nab at Progressive Engineering and John Williams of Williams Brothers Construction.

Design Report August 14, 2008 Responses Requiring Additional Input:

3. **Flow Monitoring:** The engineer indicated in our recent meeting that flow monitoring during the fall of 2008 suggested significant Inflow and Infiltration (I/I) reductions. However, the engineer has not provided data and his analysis of existing and projected flow ranges based on this recent monitoring. A reserve capacity evaluation should be completed before the City Council elects to allow new sewer connections. *Flow monitoring data from September 2007 through the end of 2008 is attached, including monthly summaries. Please compare the data from the September through December period for each year. There is a 25% reduction in average daily flow (51,000 gpd) and a 23% reduction in peak day flow between those periods.*

4. **NPDES Effluent Limitations:** On January 8, 2009 your engineer submitted an application to EPA for renewal of the NPDES permit including a proposed implementation schedule, plan and specification descriptions, and proposed water quality limits for the Plummer Creek discharge. Before DEQ can approve the construction plans and specifications, we need evidence that EPA found the permit application to be complete and intends to issue a draft NPDES permit based on the proposed effluent limitations. *Acknowledged. EPA has requested concurrence from the Coeur d'Alene Tribe. That letter has been sent to EPA dated 1/29/09.*

5. **Reuse:** Wastewater reuse is not being considered for the new facility except for limited grounds irrigation. Although the reuse standard does not directly apply to a discharging system, we understand the Coeur d'Alene Tribe has required that the wastewater be treated to Class A standards as described in the Idaho Rules for the Reclamation and Reuse of Municipal and Industrial Wastewater (IDAPA 58.01.17).

We are investigating whether or not the proposal to use Class A wastewater for limited irrigation purposes within the treatment plant site will need to be done in accordance with a Wastewater Reuse Permit, is excluded from permitting, or can be allowed under a waiver of the rules. *USKH has prepared and Mayor Clark is going to sign and send a request for a permit waiver in a letter addressed to Mr. Gaffney.*

8. **Operator Requirements:** It has been determined that this facility will require the services of Class III wastewater treatment operators. We understand from the design engineer that the city intends to hire a Class III responsible charge operator in January of 2010 about six months prior to completion of construction of the new plant. The services of the required substitute responsible charge Class III operator are planned by contracting with someone not employed by the city. DEQ is in agreement with this plan for staffing the new facility. *Acknowledged. The City appreciates the assistance DEQ has offered on this matter.*

12. **Dual Treatment Trains and Unit Bypasses:** The engineer indicated that each unit process has been designed with dual train and bypass capacity. This should allow the plant to achieve treatment standards in the event a particular component needs to be taken off line for repair or maintenance. The Operation and Maintenance Manual for the facility will need to discuss these provisions in detail. *Acknowledged. The O&M Manual is not in our current scope, but we plant to request that it be added back in at the end of 2009, once we've progressed several months into Construction.*

14. **Treatment Site:** The report indicated that the new plant will be constructed on property the City of Plummer owns via a property transfer with the Idaho Department of Transportation (ITD) located immediately northwest of Toetly Road and Trail of the Coeur d'Alenes recreational bike path. We understand that work was completed by ITD to cleanup and remediate the site after petroleum products were discovered during soil investigations. Since the property was previously used as a gravel pit, it will be necessary to import topsoil materials in order to establish final landscaping. This might be an opportunity for the city to reuse some of the sludge and soil materials needing disposal when the city lagoons are decommissioned. A six-foot high chain link fence will surround the final 2.5-acre treatment plant facility. *As a point of clarification, ITD has not completely removed the contaminated soil. USKH has developed a scope of work and estimate to complete the removal during construction of the new treatment facility.*

    The 30-foot distance from the treatment plant to public access on the Trail of the Coeur d'Alenes and 67-foot distance to residential property requires that the facility totally enclose the facilities to mitigate noise and odor impacts. The design engineer rejected a recommendation to locate the plant further away from the property boundaries and proposed construction of an earthen berm with plantings along the Trail of the Coeur d'Alenes to mitigate nuisance concerns. *We have been unable to place an earthen berm between the fence and the trail due to grading constraints. We do have extensive screening plantings as indicated on the Landscape drawings.*

15. **Odor and Noise Controls:** An Odor Management Plan for the new facility needs to be submitted that discusses measures that will mitigate odor and noise impacts by the facility. We have also not received a copy of the written comments on the treatment plant that were solicited from the administrator of the Trail of the Coeur d'Alenes. *We have contacted the Coeur d'Alene Tribe to request the written comments. The Odor Management Plan will be submitted by February 6, 2009.*

16. **Industrial Waste:** The engineer indicated that the city will develop an industrial pretreatment ordinance in anticipation of the possibility of discharge of industrial wastewater into the system. *The ordinance will be drafted for City consideration this spring during the bidding period.*

17. **Sludge Disposal:** The report proposes to dispose of the dewatered biosolids produced by the treatment plant by land application and incorporation into the soils at the city's present 40-acre wastewater land application site. Storage of dewatered sludge in trailers located inside at the treatment site with periodic transport to the 40-acre application site for stockpiling and/or land application is proposed. From a siting and capacity perspective, this proposal appears feasible. However, the design engineer needs to prepare and submit to DEQ a Sludge Management Plan to finalize the manner by which sludge will be disposed. *A copy of the final, stamped Biosolids Management Plan is attached to this letter.*

18. **Lagoon Sludge Disposal:** The report identifies three possible disposal methods for the sludge remaining after the new plant is operational and the existing wastewater lagoons are dewatered. We suggest that the final choice for disposal of this sludge be discussed in the Sludge Management Plan. *The Biosolids Management Plan includes a discussion of the fate of the existing lagoon sludge.*

September 30, 2008 Meeting: The three comments discussed during our meeting on September 30th have been addressed by the engineer. We appreciate that DEQ finds that the Design Report for Wastewater Facilities for the City of Plummer as prepared by USKH dated September 2008 is acceptable.

95% Construction Plans and Specifications: Drawings and specifications were submitted to DEQ on December 28, 2008 constituting 95% completion. On January 9, 2009 a meeting was held with the design engineer to discuss the project.

1) Remediation of petroleum contamination found in the soils at the treatment plant site as noted on Sheet T3.2 needed to be accepted by the US-EPA and Coeur d'Alene Tribe acting as the water quality authorities in this area. *On the evening of January 29, 2009, the City Council met with ITD, USDA Rural Development, and USKH to discuss final transfer of the property and coordinate responsibility for the final cleanup in accordance with the EPA-accepted (As of January 14, 2009) ITD plan dated June 2008.*

2) The EPA/Coeur d'Alene Tribe also need to accept the erosion control plan and site disturbance activities implemented during this project as described in the Drainage Study and Stormwater Design Report prepared by USK, Inc. dated December 19, 2008. *A copy of the Drainage Study and Stormwater Design Report was sent to the Coeur d'Alene Tribe's public Works Director, with a request for written acceptance on January 27, 2009.*

3) Title to the treatment plant property by the City of Plummer from the Idaho Department of Transportation needs to be secured. Easements for the discharge pipeline if needed also need to be secured. *Regarding the title to the treatment plant property, the January 29, 2009 meeting accomplished the property transfer. A copy of the recorded deed will be sent to IDEQ as soon as it is available from Benewah County. A right-of-way map and exhibits have been prepared for City*

review and signature to certify ownership of all needed rights-of-way for the project. When that has been signed, a copy of the signed document will be sent to DEQ for your records.

4) Sheet C1.2 describes the demolition plan for the existing lagoons and Section 13016 of the specifications outlines biosolids removal requirements. How will the wastewater in the lagoons be removed and disposed? *Specification Section ISPWC 205, Dewatering, has been modified in the contract documents to specify decanting between the lagoons, allowing settlement of solids, until all wastewater has been discharged to Plummer Creek.*

5) The landscaping plan for the treatment site indicates that topsoil from the site will be stockpiled (where?) and then replaced to establish the vegetated areas. Since the site was a gravel pit, how much topsoil is available? As above, we suggest blending the topsoil with some or all of the stabilized biosolids from the lagoons to develop a suitable soil type and depth for the site landscaping. *Specification Section 02923 has been modified to include the phrase, "..or from the City property located north of the site". Also, Specification Section 02936 now includes a paragraph allowing lagoon sludge as a soil amendment.*

6) We recommend an isolation valve on each side of the force main distribution line at the wetland discharge. *Isolation valves are now depicted on Sheet C4.14.*

7) Sheet C4.14 shows a 1% slope on each 130-foot long perforated line at the wetland discharge area as opposed to a flat disposal line. The engineer needs to determine this design will result in equal distribution and discharge along the length of each lateral and not cause the lower ends of the trenches to channelize. *A copy of the calculations showing the flow distribution through the laterals is attached. The percent difference in flow rate through the top orifices from that through the bottom orifices ranges from 1.6% to 2.3%.*

8) The drawings call for installation of a backflow preventer on the potable water service line entering the operation building and the mechanical building and the specifications further address these devices. However, the type of device or assembly is not indicated. For sewage treatment plants, a reduced pressure backflow device or air gap needs to be installed in accordance with state rules and the city's cross-connection control ordinance. *Specification Section 15427 now requires a reduced pressure backflow device in paragraph 2.1.B.*

9) If the influent pump station fails to operate and sewage surcharges the city collection system, where will the wastewater end up? Would it be prudent to grade the site to divert this wastewater from flowing into Plummer Creek? *Wastewater surcharge from the lift station site would end up in Plummer Creek. We have investigated this issue, but the Coeur d'Alene tribe requires that the old lagoon site be restored to its pre-developed state, precluding using it as emergency overflow storage. However, we have a great deal of redundancy in the system. We've built-in four hours of storage (at the 315,000 gpd design flow rate) within the lift station wet well. The first phase pumps are duplex, with triplex pumping to be added in the second phase. We have standby generation connected. The forcemain will be kept clean using a pigging port. With this combination of protections, it is very unlikely that the lift station will surcharge during its design life.*

10) The valve vault at the influent and effluent pump stations constitute confined spaces without any provisions for ventilation. The O&M Manual needs to address how the system operators will be

trained and equipped to safely enter these and other confined spaces throughout the site. *Specification Section 13011 has been modified to require the contractor to supply the City with confined space entry equipment, including a blower, a manlift, harness, and gas detector. The City will have its personnel certified for confined space entry by taking and maintaining 40-hour HAZWOPER certification.*

11) The engineer has indicated open basins throughout the site may be equipped with floating covers in order to comply with setback requirements in the Idaho Wastewater Rules. We are not entirely convinced these covers will effectively control odors or impact performance of the various aeration basins. We would like the engineer to reconsider installation of an enclosed building over the 65-foot by 85-foot treatment area. This building could be equipped with odor control systems on the ventilation system that could mitigate the odor issues associated with the location. *Per our conversation earlier in the week, we have changed the floating cover to an add-alternate schedule. In the event that the City receives multiple odor complaints about the facility between completion of phase one construction and commencement of the planning for phase two, phase two shall include a retrofitting roofed enclosure for the phase one extended aeration system basins, and a roofed enclosure for the phase two extended aeration system basins.*

12) The west end of the mechanical building appears to involve an open-sided biosolid floor storage area. The engineer has proposed biosolid storage in this space in covered trailers but has not included information about these trailers in the specifications. We recommend that this area be enclosed on the sides. *Specification Section 13012 now includes a paragraph 2.8 defining a sludge transportation vehicle with a dump bed, 4 cubic yard capacity, and an air-tight cover.*

13) The design calls for installation of a 5,000 gallon effluent storage tank with a pump that charges a non-potable water system serving the belt filter press system and the irrigation system for the site. All of the non-potable pipelines need to use purple colored pipe designating non-potable content. A flow meter needs to be installed on the non-potable system to keep track of the volume of wastewater reused. *All reuse pipe, including irrigation pipe, will be purple pipe. Specification Section 02813 paragraph 2.1.A has been modified to require purple pipe as required in IDAPA 58.01.17.*

14) It appears the use of sewage effluent on-site for irrigation purposes involve wastewater reuse and needs to be permitted in accordance with the Idaho Rules for the Reclamation and Reuse of Municipal and Industrial Wastewater (IDAPA 58.01.17). Since this reuse is confined to the site and may not have a detrimental effect on water quality, DEQ recommends that the city apply to us for a waiver per Section 900 of these rules. *As noted above in Design Report item 5, the City is applying for a waiver. A new Specification Section 13022 has been added defining a totalizing flow meter for the reuse system.*

15) We understood from the design engineer that a berm of soil will be placed along the Trail of the Coeur d'Alenes with various shrubs planted on the berm to screen the facility. The drawings do not appear to detail this arrangement. Typical cross-sections of this area would be helpful in showing reasonable efforts are being undertaken to reduce public exposure and mitigate odor complaints. *As noted above in our response to Design Report item 14, we have been unable to fit a berm in our grading plan.*

16) Section 02813 of the specifications for the irrigation system should require the use of purple colored pipelines to design the contents as non-potable. *Please see the first part of the response to item 13 above.*

17) Part 1.6 of section 13001 of the specifications requires the contractor to submit to the engineer a submittal for the extended aeration wastewater treatment system stamped by an engineer. A copy of this same submittal needs to be provided to DEQ. *This Specification Section has been modified to require the same submittal to DEQ.*

18) Part 1.4 of specification 13002 for the advanced phosphorous removal filtration system requires a manufacturer warrantee for five (5) years that the orthophosphate concentration of the effluent not exceed a monthly average of 0.025 mg/l. In the event the equipment does not perform as required, what happens? *The Supplemental Conditions include a provision in SC13.07.A as follows: "The contractor shall honor extended warrantees specified for individual assemblies included in the technical specifications under the same terms and conditions as those for the general one-year warrantee from the date of Substantial Completion. Owner remedies specified in General Condition13.07.A apply to those assemblies."*

19) A copy of the shop drawings for the phosphorous equipment accepted for installation needs to be provided to DEQ. *This Specification Section has been modified to require the same submittal to DEQ.*

Sincerely,
USKH Inc.

Alan E. Gay, P.E.
Project Manger

Attachment: City of Plummer Wastewater Treatment Facility Construction Documents – Final
City of Plummer Wastewater Flow Records, Sept '07 – Dec '08
City of Plummer Biosolids Management Plan – Final
Wetland Discharge Hydraulic Calculations

c: Mayor Tim Clark, City of Plummer, P.O. Box B, Plummer, Idaho 83851 (with attachments)
Scott Fields, Coeur d'Alene Tribe, P.O. Box 408, Plummer, ID 83851
Jim Kackman, Director of Public Works, Coeur d'Alene Tribe, P.O. Box 408, Plummer, ID 83851
Susan Poulsom, EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101
Jeff Beeman, USDA Rural Development, 7830 Meadowlark Way, Suite C3, Coeur d'Alene, ID 83815 (with 11 x 17 Plans and Specs)
Noel LaRoque, USDA Rural Development, 9173 West Barnes Drive, Suite A1, Boise, ID 83709 (with Construction Documents attachments)

Work Order: 1057200

AG/ag i:\1057200\correspondence\letter\1057200 gary gaffney letter 013009.doc